This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Problem Image Mailbox.

INTERNATIONAL SEARCH REPORT

Inter ɔnal Application No
PCT/US 00/04115

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 D04B23/08 D04H1/52 D04H1/45

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 D04B D05C D04H D06N A44B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3 722 442 A (MAC ISAAC J ET AL) 27 March 1973 (1973-03-27) column 6, line 19 - line 58; figure 11 column 7, line 27 - line 43	1,5,7,9, 12, 15-18, 30-33, 36,37, 48,56, 58-75, 77, 79-87,96
Y	US 4 818 316 A (WEINLE PAUL L ET AL) 4 April 1989 (1989-04-04) column 4, line 6 - line 21	1,9,12, 31-33, 36,37, 60-74, 80-87,96

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
3 July 2000	18/07/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Barathe, R

Form PCT/ISA/210 (second sheet) (July 1992)

BNSDOCID: <WO 0052246A1 | >

INTERNATIONAL SEARCH REPORT

Inter ɔnal Application No
PCT/US 00/04115

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 1 427 191 A (VYZK USTAV PLETARSKY) 10 March 1976 (1976-03-10) page 1, line 14 - line 31 page 1, line 56 -page 2, line 61	1,15-18, 30
Y	EP 0 529 575 A (BASF CORP) 3 March 1993 (1993-03-03) figure 1	48,75, 77,79-87
Y	WO 98 03711 A (DU PONT) 29 January 1998 (1998-01-29) page 11, line 8 -page 12, line 11	56,58,59
Y	EP 0 568 916 A (HOECHST CELANESE CORP) 10 November 1993 (1993-11-10) claim 5 column 4, line 28 - line 34	1,5,7
A	DE 42 28 563 A (CHEMNITZ TEXTILTECH FORSCH) 3 March 1994 (1994-03-03) claim 3	1,9

3

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter nal Application No
PCT/US 00/04115

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3722442 A	27-03-1973	BE 778677 A	28-07-1972
		CA 955386 A	01-10-1974
		DE 2204122 A	10-08-1972
		GB 1382273 A	29-01-1975
US 4818316 A	04-04-1989	US 4733545 A	29-03-1988
GB 1427191 A	10-03-1976	CS 159027 B	27-12-1974
		CA 981002 A	06-01-1976
		DE 2324956 A	06-12-1973
		JP 49047672 A	08-05-1974
EP 0529575 A	03-03-1993	US 5370757 A	06-12-1994
		CA 2066877 A,C	01-03-1993
		CZ 9202617 A	17-03-1993
		DE 69214758 D	28-11-1996
		DE 69214758 T	20-02-1997
		ES 2093154 T	16-12-1996
		JP 5211935 A	24-08-1993
		SK 261792 A	10-05-1995
		US 5464677 A	07-11-1995
WO 9803711 A	29-01-1998	US 5939166 A	17-08-1999
		AU 3802597 A	10-02-1998
		CA 2260006 A	29-01-1998
		CN 1231004 A	06-10-1999
		EP 0912786 A	06-05-1999
		JP 11514708 T	14-12-1999
EP 0568916 A	10-11-1993	AT 169697 T	15-08-1998
		AU 3820493 A	04-11-1993
		BR 9301703 A	03-11-1993
		CA 2094875 A	02-11-1993
		CN 1084119 A	23-03-1994
		CZ 9300807 A	17-11-1993
		DE 69320240 D	17-09-1998
		DE 69320240 T	24-12-1998
		JP 6123052 A	06-05-1994
		US 5532035 A	02-07-1996
		US 5630896 A	20-05-1997
		ZA 9303072 A	30-10-1994
DE 4228563 A	03-03-1994	NONE	

BNSDOCID: <WO 0052246A1 | >